

**Please amend claim 12 as follows:**

12. (three times amended) A method of testing the chronic effect on neural or muscle tissue samples of chemical substances [as medicines], which comprises:

providing a detector comprising a plurality of microelectrodes on a substrate, which plurality of microelectrodes are coated with a [collagen] covering for increasing the adhesion of said neural or muscle tissue samples to said plurality of microelectrodes, for contacting the tissue sample and detecting an electrical property of said tissue sample to which a chemical substance has been added and said plurality of microelectrodes further for applying an electric stimulus to the tissue sample;

providing an image detection system for observing the visible properties of the tissue sample from outside;

contacting said neural or muscle tissue sample with a plurality of said electrodes; measuring the electrical or visible properties of the neural or muscle tissue sample;

adding [a] said chemical substance to the neural or muscle tissue sample; measuring the electrical or visible properties of the neural or muscle tissue sample after said addition of said chemical substance to the neural or muscle tissue sample and at a time which measures chronic response to said chemical substance; and

comparing said electrical or visible properties before and after said addition of said chemical substance to determine whether said added chemical substance has had an influence on the neural or muscle tissue sample.

Please amend claim 13 as follows:

13. (three times amended) A medicine testing device, comprising an electrical measurement portion comprising a plurality of microelectrodes on a substrate for the measurement of an electrical property of a neural or muscle tissue sample to which a chemical substance has been added and said plurality of microelectrodes further for applying an electric stimulus to the neural or muscle tissue sample and which plurality of microelectrodes are coated with a [collagen] covering for increasing the adhesion of said neural or muscle tissue samples to said plurality of microelectrodes, [said plurality of microelectrodes coated with a collagen covering] for chronic measurement of said electrical properties, and

a visible properties detection portion for the measurement of visible properties of the neural or muscle tissue sample,

wherein the influence that the chemical substance has on the neural or muscle tissue sample can be measured from the output of a plurality of said microelectrodes of the electrical measurement portion and the visible properties detection portion.

Please amend claim 14 as follows:

14. (twice amended) The method of claim 12 for testing the effect on neural or muscle tissue samples of chemical substances as medicines, wherein the step of adding chemical substance to the neural or muscle tissue sample comprises adding said chemical substance in an [unknown] arbitrary concentration to the neural or muscle tissue sample.